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USDOC FOR 4530/MAC/ANESA/OSA
ICE HQ FOR STRATEGIC INVESTIGATIONS
STATE FOR EB/ESP

E.O. 12958: N/A

TAGS: [ETTC](#) [ETRD](#) [BEXP](#) [IN](#)

SUBJECT: EXTRANCHECK: NDAA POST-SHIPMENT VERIFICATION: INSTITUTE FOR
PLASMA RESEARCH, GANDHINAGAR, GUJARAT, LICENSE NO. D345371

REF: USDOC 007098

¶1. Unauthorized disclosure of the information provided below is prohibited by Section 12(c) of the Export Administration Act.

¶2. Acting Export Control Officer (ECO) David Nardella and BIS FSN Prem Narayan conducted a Post-shipment Verification (PSV) at Institute for Plasma Research (IPR), Vadodara, Gujarat, on February 2, 2007.

¶3. BIS requested a PSV at IPR, an autonomous Physics research institute under GOI's Ministry of Science and Technology, Website: www.ipr.res.in. IPR was listed as the Ultimate Consignee for one X1E computer, air cooled with one chassis and 3 modules containing 24 multi-streaming processors and 96 gigabytes of memory and software controlled under ECCN 4A003. The license applicant was Cray, Inc., Mendota Heights, MN.

¶4. ECO along with FSN Narayan met with Sutapa Ranjan (Ranjan), In-charge, IPR Computer Centre and Dr. Amita Das (Das), Professor, IPR. Prashant Agrawal (Agrawal), Under Secretary (AMS), facilitated the meeting. Agrawal was also present at the meeting.

¶5. IPR officials had not previously been aware of the BIS export regulations. This was the first USG or BIS official visit to IPR. Prior to shipment, Cray provided the BIS export license conditions to IPR by providing a copy of the export license. Ranjan stated that the supercomputer was purchased against a global tender. She provided a copy of the Cray Proforma Invoice - Commercial, End-Use and Remote Access Statement, Form BIS-711, TSR Letter of Assurance for Export of Software, TSR Letter of Assurance for Export of Technology, Statement acknowledging the receipt and understanding of all restrictions, IPR Purchase Order, Cray Commercial Invoice, BIS export License D345371, and IPR Material Receipt Note.

¶6. Ranjan confirmed the stated end-use of the supercomputer. It is used for experimental and theoretical research in Plasma Physics. She stated that in-house developed applications are operated on the computer by IPR's physics theoreticians for basic research in a variety of areas of theoretical plasma physics. Das emphasized areas of plasma physics that are amenable to numerical computation. An example cited by Das was the physics of magnetically confined hot plasmas and non-linear plasma phenomena. According to Das, plasma could be defined as any matter in an ionized gaseous state. She explained that research in plasma physics has been ongoing for the past 200 years, yet is still in a theoretical stage. She further stated that as part of the research in Plasma Physics, they study the characterization of turbulence. She provided an analogy of the stirring of a liquid in a glass as an example of turbulence; the liquid having been stirred exhibits certain characteristics and

produces certain spectrums of measurable energy that can be studied. They are also artificially trying to generate the temperature generated by the sun to conduct study on magnetically confined high temperature plasmas.

¶7. Ranjan stated that only seven IPR scientists have computational access to the system. Only IPR students pursuing a Ph.D. degree at the Institute in Plasma physics are allowed to use the system on the basis of securing prior permission from Das. Ranjan provided a sample computer-generated usage log. She stated that remote access is not permitted. Remote access is allowed only to the Cray engineer based in Australia to monitor the smooth functioning of the supercomputer, and that is controlled by IPR. The passwords to access the system are changed regularly. Ranjan confirmed their compliance with the Security Safeguard Plan (SSP). ECO and FSN Narayan were given a tour of the computer center, in a locked Room. Only Ranjan and her back-up IPR IT employee have access to the IPR Computer center where the supercomputer is housed. ECO and Narayan recorded the serial and part numbers of the supercomputer. The IPR Campus is guarded 24 hours a day. Members of IPR were asked if the Cray computer was used for Nuclear, Chemical, or Biological Weapons development. They immediately replied that it was not, nor will it ever be.

¶9. Established in 1982, IPR is an autonomous Physics research institute under the GOI's Ministry of Science and Technology. It is involved in research in various aspects of plasma science including basic plasma physics, research on magnetically confined hot plasmas and plasma technologies for industrial applications. IPR is now internationally recognized for its contributions to fundamental and applied research in plasma physics and associated technologies. It has a scientific and engineering manpower of approximately 200 personnel with core competence in theoretical plasma physics,

computer modeling, superconducting magnets and cryogenics, ultra high vacuum, pulsed power, microwave and RF, computer-based control

and data acquisition and industrial, environmental and strategic plasma applications.

¶10. Recommendation: Post recommends Institute for Plasma Research as a reliable recipient of the controlled U.S.-origin commodity. All indications are that the listed commodity is being used in accordance with U.S. Export Administration Regulations.
(DNARDELLA/PNARAYAN) Mulford